

5

CLAIMS

1. A method for establishing a data communication session with a mobile subscriber in a wireless communication network, comprising:

registering a data communication session with a packet data server;

10 providing a wait time period during which the packet data server refrains from sending a configuration request to the mobile subscriber; and

following the wait time period, sending a configuration request signal to the subscriber to negotiate establishment of the data communication session.

15 2. The method of claim 1, further comprising determining a fixed duration for the wait time period and providing said fixed duration to the packet data server.

3. The method of claim 1, further comprising calculating a dynamic duration for the wait time period based on a network condition and providing said dynamic duration to the packet
20 data server.

4. The method of claim 1, wherein providing the wait time period comprises providing a wait time period having a duration between 10 milliseconds and 1 second.

25 5. The method of claim 1, wherein providing the wait time period comprises providing a wait time period having a duration of approximately 100 milliseconds.

5 6. The method of claim 1, wherein registering the data session comprises registering
the data session according to an A11 protocol compatible with a Point-to-Point Protocol (PPP)
communication network.

 7. The method of claim 1, wherein sending the configuration request signal
10 comprises sending a configuration request signal according to a protocol compatible with a
Point-to-Point Protocol (PPP) communication network.

 8. A method for communicating with a mobile subscriber in a wireless
communication network, comprising:

15 registering a data session with a packet data server;
 providing a first wait time period during which the packet data server negotiates an initial
configuration with the mobile subscriber, the first wait time period substantially defining a wait
time following unsuccessful attempts to send an initial configuration request signal to the mobile
subscriber during establishment of the data session; and

20 following providing the first wait time period, providing a second wait time period,
different from the first wait time period, the second wait time period substantially defining a wait
time following a data communication error event before the packet data server attempts to
renegotiate the data session with the mobile subscriber.

25 9. The method of claim 8, wherein providing the second wait time period comprises
providing a second wait time period having a duration exceeding that of the first wait time
period.

5

10. The method of claim 8, further comprising repeatedly waiting a time equal to the first wait time period until an air link to the mobile subscriber is successfully established.

11. The method of claim 8, wherein providing the second wait time period comprises
10 providing a second wait time period having a duration substantially equal to a default time-out duration defined by a communication protocol controlling the data communication.

12. The method of claim 8, wherein providing the first wait time period comprises providing a first wait time period having a duration between 10 milliseconds and 1 second.

15

13. The method of claim 8, wherein providing the first wait time period comprises providing a first wait time period having a duration of approximately 100 milliseconds.

14. A method for communicating with a mobile subscriber in a wireless
20 communication network, comprising:

registering a data session with a packet data server;

negotiating a data communication session with the mobile subscriber; and

buffering data packets in a buffer in a time period between said registering of the data session and said negotiating of the data communication session, the act of buffering said data
25 packets preventing loss of data packets sent from the packet data server to the mobile subscriber prior to successful establishment of an air link to the mobile subscriber.

5 15. A method for establishing a data communication session with a mobile subscriber
in a wireless communication network, comprising:

 registering a data session with a packet data server;

 sending no configuration request signal until the packet data server receives a signal
indicating that a radio air link has been successfully established to the mobile subscriber; and

10 following receipt of said signal indicating that the radio air link has been successfully
established, sending a configuration request signal to the mobile subscriber.

 16. A method for establishing a data communication session with a mobile subscriber
in a CDMA-2000 wireless communication network, the method comprising:

15 exchanging data session registration request and reply signals between a packet control
function module and a data packet server module to register the data communication session
according to a known communication control protocol; and

 preventing a premature transmission of a data session configuration request signal from
the data packet server module to the mobile subscriber by preemptively withholding the data
20 session configuration request signal at the data packet server module until a triggering event is
received by the packet data server indicating that the data session configuration request signal is
to be sent to the mobile subscriber.

 17. The method of claim 16, wherein withholding the data session configuration
25 request signal continues until a time-based trigger signal is received by the packet data server.

5 18. The method of claim 16, wherein withholding the data session configuration
request signal continues until an event-based trigger signal is received by the packet data server.

19. A system for wireless communication, comprising:

a mobile subscriber;

10 a packet data server;

a communication network adapted for carrying control and data packets between the
mobile subscriber and the packet data server;

a radio air link portion of said communication network, the radio air link having
associated therewith an air link establishment delay time; and

15 said data server including a processor that sends a configuration request signal over said
communication network responsive to a trigger signal indicating that said radio air link is ready
to carry said configuration request signal to said mobile subscriber.

20 20. The system of claim 19, wherein the trigger signal comprises a time-based signal
indicating that a wait time exceeding the air link establishment delay time has elapsed.

21. The system of claim 19, wherein the trigger signal comprises an event-based
signal indicating that the air link has been successfully established to the mobile subscriber.